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APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
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08/489,488 06/12/95 STEARNS

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EXAMINER

MARIAM.D

ART UNIT

PAPER NUMBER

2616

DATE MAILED:

01/10/97

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

OFFICE ACTION SUMMARY

- ☐ Responsive to communication(s) filed on _____
- ☐ This action is FINAL.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

- ☒ Claim(s) 1 - 15 is/are pending in the application.
- Of the above, claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1 - 15 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claims _____ are subject to restriction or election requirement.

Application Papers

- ☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- ☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
- ☐ received.
- ☐ received in Application No. (Series Code/Serial Number) _____
- ☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

- ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- ☒ Notice of Reference Cited, PTO-892
- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 6
- ☐ Interview Summary, PTO-413
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Notice of Informal Patent Application, PTO-152

-- SEE OFFICE ACTION ON THE FOLLOWING PAGES --

DETAILED ACTION

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1. The disclosure is objected to because of the following informalities:

-On page 10, line 7, numeral number "12" should be changed to "2".

-On page 12, lines 34 and 35, sequence of frames "B3" and "B6" are not shown on

Figure 6. Also, on page 13, line 11, frame "B5" is not shown on figure 7.

-On page 16, line 28, the phrase "IQ matrix , #104" must be stated as an **IQ** matrix in the drawing of Figure 8. Appropriate corrections are required.

Drawings

2. This application has been filed with informal drawings which are acceptable for examination purposes only. Formal drawings will be required when the application is allowed.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims ^{3,}_{1, 2} 4, 5, 6, 7, 8, 10, 11, 12, 13, 14 and 15, are rejected under 35 U.S.C. 103(a) as being unpatentable over Purcell et al (5,379,356) in view of Normile et al (5,212,742)

With regard to claim 8, Purcell et al discloses a decompression system comprising:

-A secondary processor (i.e., co-processors) - Figure 2, # 202-204

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-Means for decompressing in a processor at least a system layer of the compressed data, wherein other data layers of the set are decompressed in the secondary processor (Figure 2, #200). Information of compressed or decompressed data are stored in a storage device (memory) in an electronic form and accessed by the processor. The processor forms the paths for the operations among the coprocessors and controls all the activities by executing the data to or from the coprocessors.

Purcell et al discloses all the claimed subject matter except a host processor and a peripheral bus connected to the host processor. However, Normile et al clearly discloses a host processor (Figure 4, #410) and a peripheral bus (i.e., Bus, Figure 4, #425) connected to the host processor. The host processor taught by Normile et al processes at least a system layer of compressed data. That is, the host processor reads and determines one complete frame of compressed data from a disk or memory and transfers the data to the coprocessors (see column 11, lines 61-64; column 12, lines 66-68; and column 13, lines 45-47).

Devices that are in direct control of the processing unit are said to be connected on-line. The peripheral bus (i.e, Bus) transports instruction and information from the processor to the peripheral device and vice versa.

Therefore, it would have been obvious to one of ordinary skill in the art to use the system as taught by Normile et al into Purcell et al's system in order to process the compressed or decompressed data by using a separate processor (i.e., host) and a peripheral bus (i.e., cpu bus)

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to transfer information between the processors and from the processors to the outside environment, thereby, efficiently utilizing all available resources.

Claim 1, is rejected the same as claim 8 except claim 1 is a method claim. Hence, arguments similar to that presented above for claim 8 is applicable to claim 1.

With regard to claims 5 and 12, Purcell et al clearly uses a video signal (i.e., data) in his signal processing system. However, the use of video and audio data in compression and decompression technique is a well known practice (official notice). Also, a video data usually comprises an audio data in many of the video programs.

With respect to claims 13, Purcell et al discloses a decompression system including:

- Means for variable length decoding--- (column 113, lines 40-41).
- Means for inverse quantizing (i.e., de-quantizing) the data---Figure 1, #106. Also the de-quantized data is applied to the inverse discrete cosine transform (Figure 1, #107).
- Means for inverse zig-zagging the decoded data (Figure 3, #308).

Claim 6, is rejected the same as claim 13 except claim 6 is a method claim. Therefore, arguments similar to that presented for claim 13 is applicable to claim 6.

With regard to claim 14, Purcell et al clearly shows a motion vector compensation means as part of the decompression operation (Figure 2, #204).

Claim 7, is rejected the same as claim 14 except claim 7 is a method claim. Therefore, arguments similar to that presented above for claim 14 is applicable to claim 7.

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With regard to claim 10, Purcell et al shows a secondary processor (i.e., coprocessors) which includes a dedicated decompression circuitry for decompression of data which has been compressed using MPEG compression (Figure 2, #202-204).

Claim 3, is rejected the same as claim 10 except claim 3 is a method claim. Therefore, arguments similar to that presented above for claim 10 is applicable to claim 3.

With regard to claim 11, Purcell et al discloses a decompressing means for decompressing a book layer of the set (i.e., group of macro-blocks), column 10, lines 37-42.

Claim 4, is rejected the same as claim 11 except claim 4 is a method claim. Thus, arguments similar to that presented above for claim 11 is applicable to claim 4.

With regard to claim 15, Purcell shows a frame buffer connected to the secondary processor (i.e., output after it is processed, in a decoding environment) column 11, lines 17-22.

5. Claims 2 and 9, are rejected under 35 U.S.C. 103(a) as being unpatentable over Purcell et al in view of Normile et al as applied to claim 8 above, and further in view of Harney et al (5,335,321).

With regard to claim 9, Purcell et al (as modified by Normile et al) discloses a decompressing means, a host processor, a coprocessor (i.e., secondary processor) and a peripheral bus. He does not teach a graphic accelerating secondary processor. However, Harney et al discloses a graphics accelerator subsystem in his video signal processing system (Figure 1, #31).

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Therefore, it would have been obvious to one of ordinary skill in the art to incorporate the system as taught by Harney into Purcell et al's (as modified by Normile et al) system in order to increase the processing speed while maintaining adequate decompression.

Claim 2, is rejected the same as claim 9 except claim 2 is a method claim. Thus, arguments similar to that presented above for claim 9 is applicable to claim 2.


Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel G. Mariam whose telephone number is (703) 305-4010.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo H. Boudreau, can be reached on (703) 305-4706. The fax phone number for this group is (703) 308-5397.

DGM

December 24, 1996


LEO BOUDREAU
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